

Editing in JOSM:

Part 2

Introduction

In the past tutorial you learned how to draw points, lines, and shapes in JOSM; how to open your OSMTracker tracks in JOSM; and how to download, edit, and upload your changes on OpenStreetMap. In this chapter, we will describe relations, JOSM editing tools and editing techniques in greater detail.


















Topics covered:

- I. Editing Tools: Tools, Building Plugin & shortcuts
- II. Relations: Description & how to edit and tag them
- III. Editing Techniques: The Dos and Don'ts

I. JOSM Editing Tools

There are a few ways you can access more editing tools in JOSM. We will look more at the default tools, some plug-ins and then keyboard editing shortcuts.

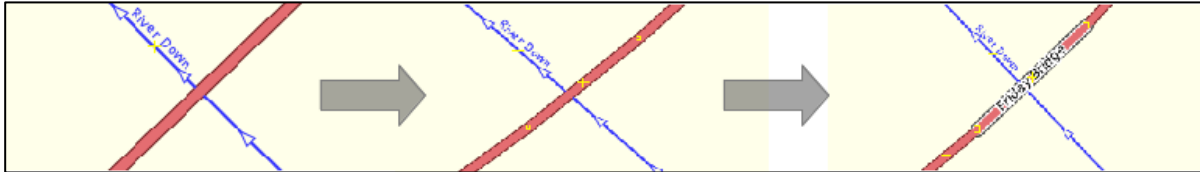
Drawing tools: JOSM has some additional tools to make it easier to draw lines and shapes.

	Split Way	P
	Combine Way	C
	Reverse Ways	R
	Simplify Way	Shift+Y
	Align Nodes in Circle	O
	Align Nodes in Line	L
	Distribute Nodes	Shift+B
	Orthogonalize Shape	Q
	Create Circle	Shift+O
	Merge Nodes	M
	Join Node to Way	J
	Move Node onto Way	N
	Disconnect Node from Way	Alt+J
	UnGlue Ways	G
	Join overlapping Areas	Shift+J
	Create multipolygon	Ctrl+B
	Update multipolygon	Ctrl+Shift+B

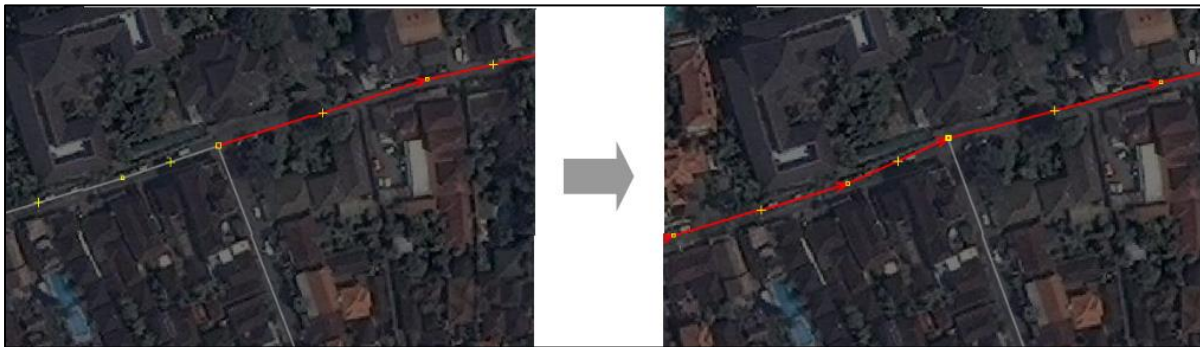
These tools are found in the “**Tools**” menu at the top of JOSM.

In order to apply the functions in this menu, you must first select a point, line or shape in the map window. Some of the most useful functions are described here:

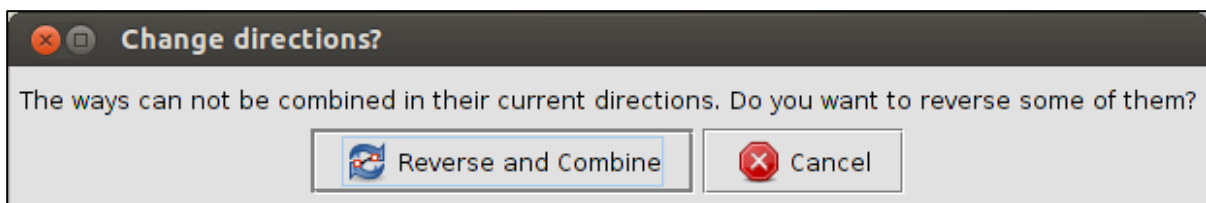
- **Split Way:** This allows you to divide a line into two separate lines. This is useful if you want to add different attributes to different parts of a road, such as a bridge. To use this function, select a point in the middle of the line that you want to split, Select **Split Way** from the *Tools* menu, and your line should be split in two.



- **Combine Way:** This does the opposite of *Split Way*. To combine two lines into a single line, they must share a single point. To use this function, select both lines that you want to combine. You can select more than one object by holding the SHIFT key on your keyboard and clicking on each line. When you have selected both lines, select **Combine Way** from the *Tools* menu.

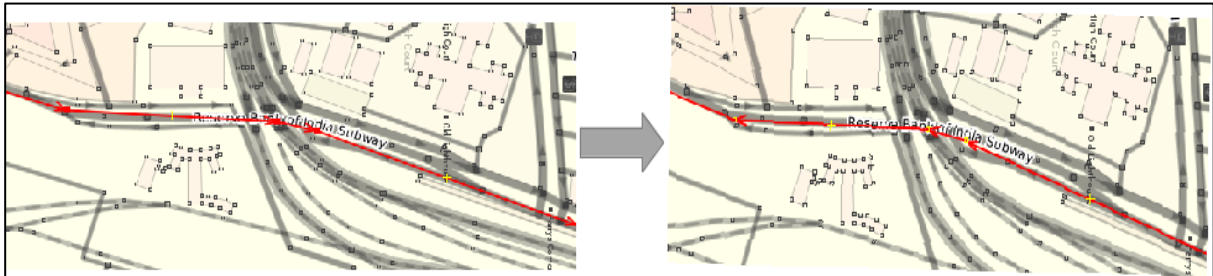


Note: If you are combining roads that have different directions, you might get this warning:

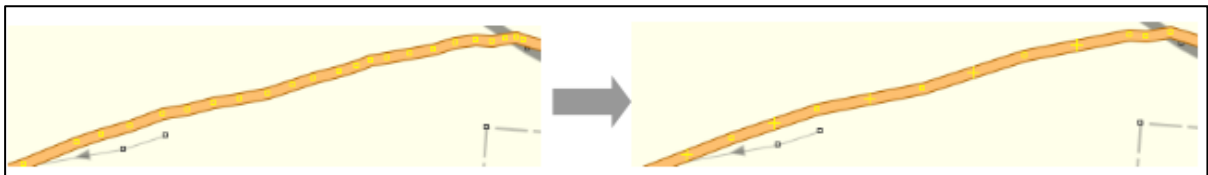


If the roads are connected and go in the same direction, then chose <<Reverse and Continue>>.

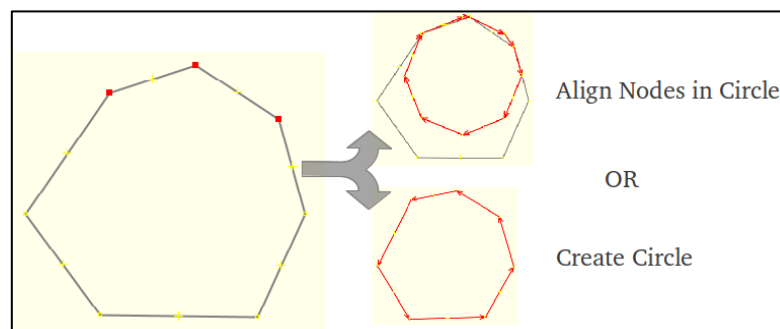
- **Reverse Way:** This will change the direction of the line. If the line incorrectly represents a road or river that is one way, you may want to change its direction. Unless someone has intentionally created a way to be one way you do not usually have to worry about altering the direction because ways in OSM default to both ways.



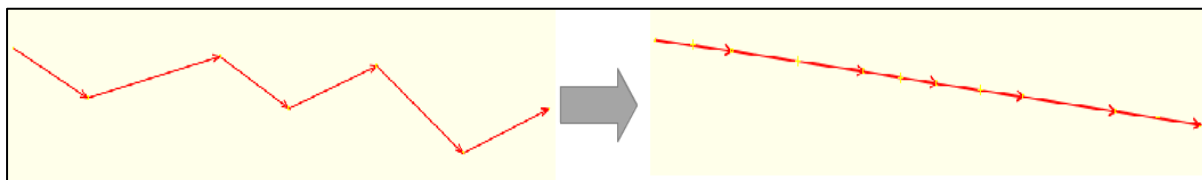
- **Simplify Way:** If your line has too many points in it and you'd like to make it simpler, this will remove some of the points from a line.



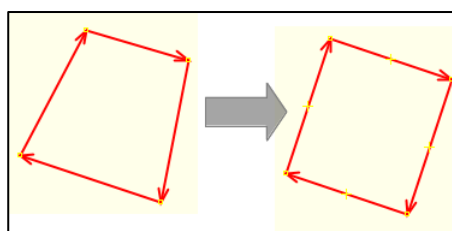
- **Create Circle OR Align Nodes in Circle:** If you are trying to make a circular shape, draw the circle as best you can and then select three nodes and the function. It will help arrange your points in a circle.



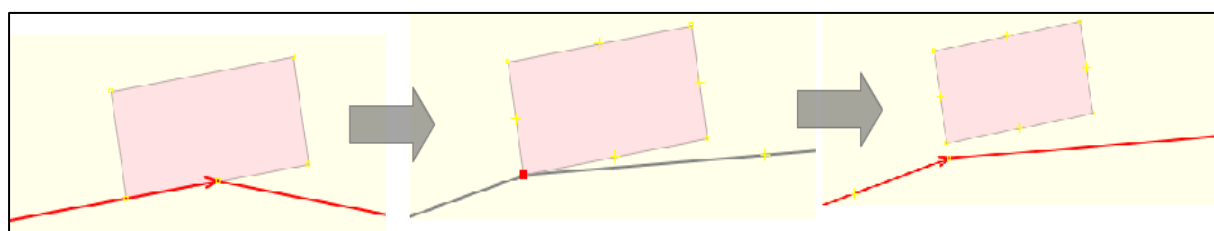
- **Align Nodes in Line:** This function will align a series of points into a straight line. With long lines it is best to select sections of the line to straighten. Be careful as this does have the tendency to shift the line a little.



- **Orthogonalize Shape:** This function is very useful for drawing regular shapes such as buildings. After you draw an area, this function will reshape it to have square corners. This feature is most useful for other regularly shaped features, such as tennis courts, or landuse areas. (Using the Building Plugin, which will be explained below, might be easier).



- **Unglue way:** This tool allows you to unattach nodes that are connected.



Note: The line and node will not actually appear separate as the last screenshot implies.

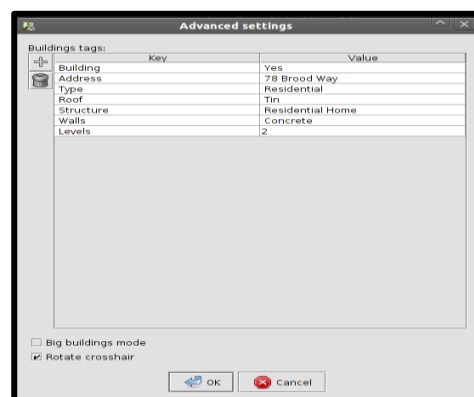
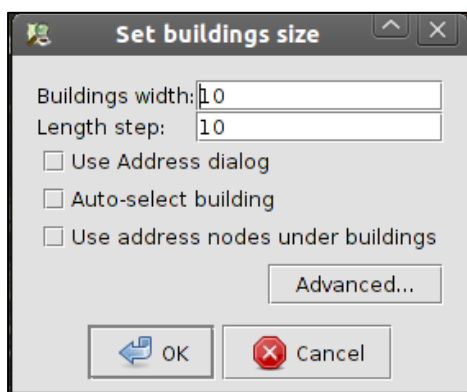
Building Plug-in: This plug-in is by far one of the most useful tools for editing (digitizing). This tool allows you to create shapes with 90 degree corners with just three clicks. First, you trace the edge of your building and then you drag out the line to make it a polygon.



You can also create more complicated buildings by using the merge option. Create your building outline, select all of the polygons (press SHIFT to highlight them all) and then hit SHIFT + J to merge the objects.



Furthermore, you can alter the default settings (size and tagging) under <<Data>> and then at the bottom “Set building size”.



Relations

Besides points, line and polygon there is one other type of object in OpenStreetMap, and these are called **relations**. In the same way that a line consists of other points, a relation contains a group of other objects, be they points, lines, or polygons. If you are looking to obtain advanced editing skills, then understanding and knowing how to properly edit relations is important.

For example, imagine that you want to map a building that has courtyards in the center. You would need to draw a polygon around the outside of the building, and you would want a other polygons around the courtyards to indicate that they are not part of the building. This is an example of a relation. The relation would contain several polygons - and the attributes of the building would be attached to the relation, not the polygons.

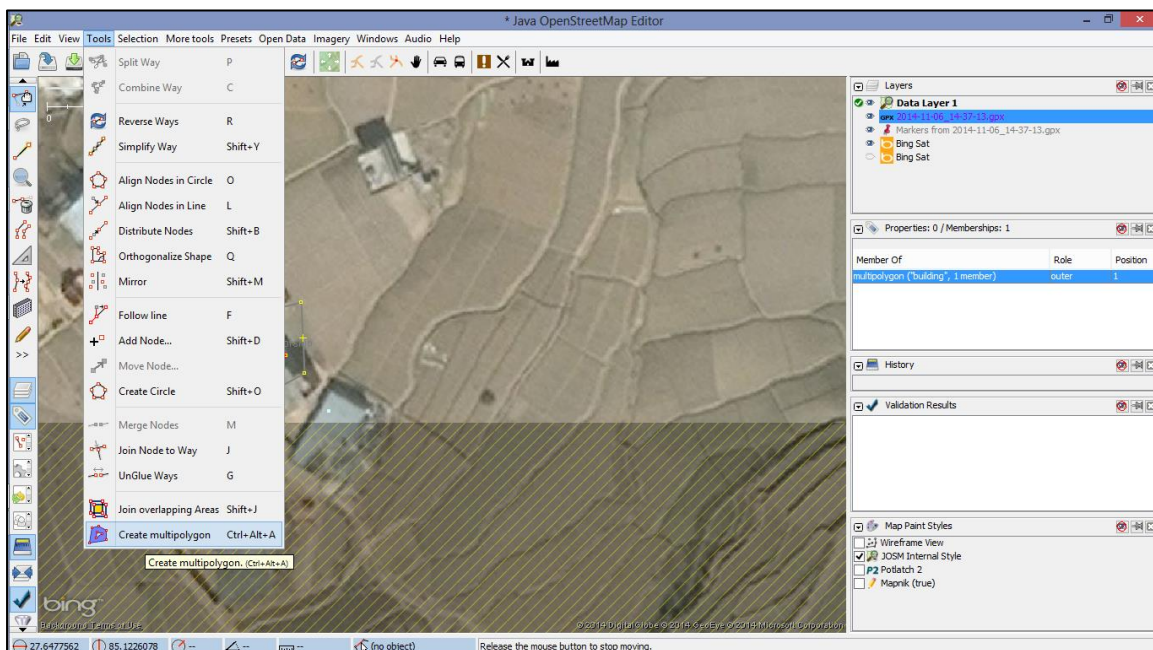


Other examples are bus routes (a collections of lines), long and complex objects (rivers or roads), or multiple polygons that are all part of one location (like buildings in a university).

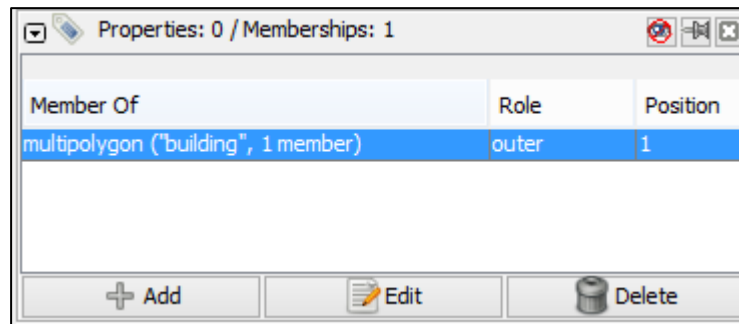
There are mainly four types of relations you will encounter in OSM: **Multipolygons**, **Routes**, **Boundaries** and **Restrictions** (such as “no left turns”). In this section we will go over Multipolygons and Routes.

Editing Relations: The multipolygon above contains a polygon for the outer limits of the building and two more to mark the inner courtyards. To create a relation from these three polygons you need to:

1. Select all of the polygons.
2. Go to “Tools” and near the bottom “Multi-polygon”



3. The polygons should automatically be created as a multi-polygon.



Editing Tips

In this section we will go over some common mistakes in JOSM and provide some editing tips for making your maps great!

A. *Some Objects Should Not Connect*

When you are creating polygons and lines that are not supposed to be connected, make sure that they are not merged together by sharing a node. For example, highway nodes should not be snapped to buildings, because no one likes a road that leads directly into a wall! If you want to disentangle two or more objects that share the same node, select the node and press <<G>>.



But, Some Objects Should Connect

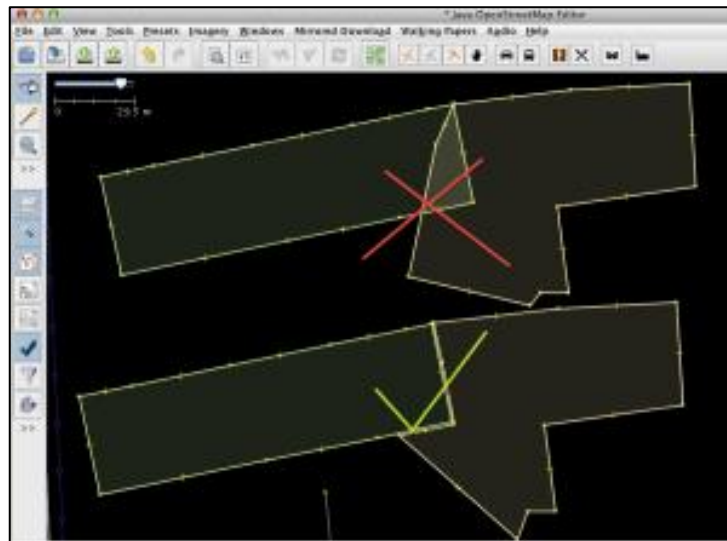
However, **some objects SHOULD connect!** Road intersections should *always* be snapped together. If two roads do not share a common node, then the computer has no way of knowing that the roads actually connect to each other

B. Overlapping Objects



A common error is to have overlapping polygons when the objects they represent do not overlap in real life. A building cannot overlap another building. This mistake is commonly made with buildings and landuse polygons. For example, a polygon drawn to represent a park outside a building should not overlap with the building. Instead it should be drawn next to the building.

There are some exceptions to this rule, such as schools. Within a school yard you might identify individual buildings using polygons, yet you also might want to create a polygon around the entire school yard. In this case it is fine for the polygons to overlap, but the rule to follow here is to make sure that the buildings are completely inside the landuse polygon.



We all make mistakes, and as you map more you will make less mistakes! Just remember that even if you upload data that contains mistakes, it is simple to fix your mistakes and upload the change again. This is what is great about OSM - you can always make it better!

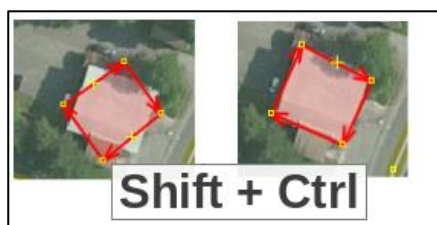
C. *Tracing Correctly*

OSM can do amazing things with identifying where objects end and what labels these objects should have; however, it needs your help in doing so. For example, if you create a road that turns into another road without a distinct node, then JOSM will continue labeling the road as the previous one. Therefore, it is necessary that you make all of your roads and objects as clearly and rigid as possible.



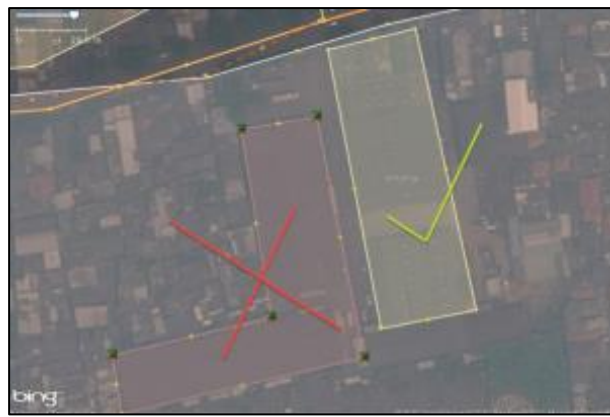
We will end this chapter with this gift:

- **ROTATE OBJECT:** If you hold the **SHIFT+ CTRL** and drag your mouse click, you can rotate the selected objects.



D. Common Mistake: Tagging Nodes When You Want to Tag Lines or Polygons












- When you are adding tags to a node, select the node and then add your tags (or use the presets menu). When you want to add tags to an entire line or polygon, it is important that you select the line or polygon, and NOT just a node that make up the line or the polygon.
- A common mistake is to use the JOSM select tool to draw a box around an object, which causes everything, both the line **and** the nodes to be selected, and when you add tags they are applied to the nodes as well. Be sure to **only** select lines when you want to add tags to them.



Appendix

1. Keyboard Shortcuts

Sometimes it can be annoying to click over and over to select different options and menus in JOSM. Luckily there are shortcut keys on the keyboard that allow you to do many common tasks (I highly recommend the DEL shortcut). Here is a list of some of the most commonly used shortcut keys, along with what they do:

	Chooses the <i>Select</i> tool		<i>Zoom Out</i>
	<i>Deletes</i> Selected Object		Split Way
	Chooses the <i>Draw</i> tool		Align in Circle
	Chooses the <i>Zoom</i> tool		Align in Line
	<i>Zoom In</i>		Orthogonalize (make a shape square)
	Combine Way		